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# The Variety of Authors and Their Content

The open-access movement arose in reaction to rights-owners' overweening claims to their intellectual property. No one disputes authors' rights to their works, but at least two distinctions are necessary: which works, and which authors?

Start with the works. Public-domain works are those published so long ago their copyright has expired. Copyright's terms have lengthened over the past three hundred years. In the early eighteenth century, authors had rights for a scant 14 years. At the rights-holders' behest, copyright terms have continuously expanded, and today protection lasts for the author's life plus 50 or 70 years, depending on the jurisdiction. The public domain has correspondingly shrunk. In the US, works enter the public domain on a rolling-year basis. In 2020, the cut-off was 1925, and proceeds annually after that. Thanks to the vast explosion of publication starting in the mid-nineteenth century, combined with ever-lengthening copyright terms, the bulk of our cultural inheritance remains legally reserved. That was not so in the past, when copyright terms were shorter. Nor will it be true in the future, when the public domain will have swelled to fill the horizon.

## Public-Domain Infinitude

Thousands of years from now, unless humanity expands or becomes more creative and productive than today, the bulk of all content will be in the public domain. Even if copyright does not change its terms, only the latest fringe of works from the past century or so will remain protected. How will that affect culture? Scientists want the latest cutting-edge work. Since they study external reality, past investigations are unimportant. Old science mainly concerns historians. But for artistic creators and for scholars whose subject is humanity and its doings, the growing accumulation of readily available material has implications. A few classics may attain relative immortality, but what counts as one varies by era. Though performed earlier by university students, Shakespeare was ignored by literary scholars until late in the seventeenth century. Jane Austen's reputation was created after her death.<sup>1</sup> *Moby Dick* was poorly received at first. Works once considered great also fade from view. Old Master paintings' market value has declined, and Renoir's reputation has tanked. Ever more past greats will compete for attention with the future's creators, although we cannot predict precisely who will have staying power and for how long. Parts of the public domain's cultural reservoir will fade in and out of fashion.

But once the bulk of human creation has entered the public domain, much of what can be said will have been uttered and will be freely available for reuse by anyone. Of course, new artforms and styles, entirely new genres, will be invented. Human creativity will hardly grind to a halt. And the scholars who study humanity will have a growing body of evidence to feast on. Mediocre and now-forgotten novels are a treasure trove for literary and cultural historians, psychologists, and anthropologists. Nonetheless, overwhelmingly immense cultural riches in the public domain will cast shadows over the creative landscape like a mountain looming over a valley.

How will that affect the hopes and abilities of future creators to innovate? Will we grow listless and bored? Become magpies and recyclers of past content? Become adept at variations on themes? Already, the role of reuse, sampling, imitation, and pastiche in modern culture puts paid to outdated Romantic conceptions of artists eternally creating anew. We may well end up having a new version of the seventeenth-century battle of the ancients and moderns, which pitted the greats of antiquity against contemporary pretenders to an equivalent stature.

An overwhelmingly vast public domain poses issues that are psychologically akin to the immortality problem. Granted eternal life, we would find our motivation to do anything in particular at any specific time undercut by knowing that other equally good moments will always arrive.<sup>2</sup> Excess memory has similar effects. Nietzsche warned against too much remembering. Without a cleansing forgetfulness, we become impotent and immobile.<sup>3</sup> The Struldbruggs, the immortals in *Gulliver's Travels*, are passive, slothful, and lethargic from having lived too long and seen too much. And in 1819 Washington Irving argued that only by forgetting once-prominent authors can we create without being overwhelmed by past works.<sup>4</sup>

The economists' notion of creative destruction amplifies fears that past encrustations hamper present action and therefore must be scoured away. Schumpeter, father of the idea, was heavily influenced by Nietzsche.<sup>5</sup> As a surfeit of time demotivates, subverting the value of any present moment, so an excess of freely available content may undermine what we today think of as creativity.

Something like this is already at work in serious music. Given certain restrictions on duration, variety, and what is considered a harmonious progression of notes, there are only a finite number of melodies—a sizable number, but not limitless.<sup>6</sup> At some point, all available melodies will have been worked into compositions—and thence may end up in the ultimate dustbin of music, as mobile

phone ring tones. Indeed, one copyright skeptic is algorithmically generating all possible melodies, thus preventing any from being protected and putting all into the public domain.<sup>7</sup>

Realizing that melody is not an infinite pasture to be grazed forever has affected the development of classical music. After music's start as almost pure melody (plainsong, Gregorian chants), polyphony and counterpoint introduced juxtaposed themes. As composers strove for novelty, melody became increasingly striking and unprecedented.<sup>8</sup> They needed other means to make their works stand out. Harmony became important, supplementing and eventually almost supplanting melody, as music developed into its Romantic phase. Mozart was easy to whistle, Schubert still, Beethoven less so. Despite his leitmotifs, Wagner's lashings of harmony are even harder to hum.

Melody was then expressly forbidden in twelve-tone theory. In its purest form, it obliged composers such as Schönberg and Webern to use each note in the scale before any particular one could be trotted out again. Melody in the conventional sense was effectively outlawed. Eventually, John Cage's *4'33"*, a composition of silence, dispensed with music's content altogether. Like other art forms in high modernism, music walked up to the brink and jumped right in. Little wonder that here, too, the way forward has been through various forms of neotraditionalism.

To continue stimulating, art cannot just repeat itself. Habituation and the attendant fading of arousal drive a constant search for variety. If novelty is prized, no art form can remain standing. Striving for something new and original, it seeks ever-fresh sources of stimulation. Since the world is large but finite, any art genre is eventually condemned either to repeat itself or to exhaust itself and die.<sup>9</sup>

Melody's fate in serious music foreshadows the general effect that a vast treasure trove of public-domain content may have on future creators. What has been the case for melody holds for plot

as well. Many stories exist, but not an infinitude.<sup>10</sup> High modernist literature's disdain for mere plot resembles the dodecaphonic approach to melody. There are only so many different ways to twist a doorknob. Once you have done them all, twisting itself becomes a bore. If novelty remains prized, a new approach to doorknobs is required. The copyright merger doctrine acknowledges such limits of the human imagination. It denies protection to the expression of ideas that can be formulated in only a limited number of ways—a drawing of a hand, explanations of simple business methods, or instructions and illustrations of how to hang drapes.<sup>11</sup> In the long run, all ideas are simple.

In popular music, the success of rap and hip hop, emphasizing rhythm, beat, and text, has downplayed the importance of melody, too. Nonetheless, a spate of recent copyright suits has claimed infringement of melody, rhythm, or other less tangible aspects of popular songs.<sup>12</sup> They suggest not only that rights-owners and their lawyers are running amok, but also that we may be approaching the outer limits of novelty in pop music, an art form that is especially hedged about by convention, expectations of genre, audience tolerance, and other aesthetic restrictions—not to mention perfectly legitimate reciprocal influencing.

Yet, as a culture, we are nowhere near public-domain surfeit. Thanks to the explosive growth of publishing beginning in the nineteenth century, public-domain works make up only a fraction of all books. Two-thirds of major US and UK libraries' holdings were published after the 1920s, and thus are still copyrighted.<sup>13</sup>

For open access, public-domain works are not the issue. Open access seeks to enlarge the public domain, rolling back copyright's ever-expanding encroachment on the cultural commons. It would prefer to scale copyright back to approximate its origins, with shorter terms and fewer works affected. But within the existing parameters of public-domain content, the main question is how technically to disseminate it.

## Grey Literature

Thanks to the expansion of copyright terms over the past two centuries, a second category of works is now one of open access's primary targets. Sometimes referred to as grey literature, these are the books or periodicals that remain copyrighted but are no longer in print. Orphan works are a subcategory of grey literature whose rights-holders can no longer be found. Publishers have decided that grey literature's sales no longer justify printing and stocking copies. Except on shelves in libraries or for sale second-hand, such works are not available.

Books lose their commercial value quickly. Most copyrighted books are out of print. Of the 10,000 US books published in 1930, only 174 were still in print in 2001.<sup>14</sup> Of the 63 books that won Australia's Miles Franklin prize over the past half-century, ten are unavailable in any format.<sup>15</sup> Most sound recordings' value is used up within a decade and the sales of most fiction dissipate after a year.<sup>16</sup> In the era when copyright terms had to be renewed, very few authors bothered.<sup>17</sup> What was the point for works with no market? Sometimes, the original publisher has gone out of business or been absorbed by a competitor. The authors may have died, and their estates and heirs are often unaware of their rights. The resulting orphaned works are still technically protected, yet they usually have little commercial value.

The bulk of books in major research libraries are grey works. Assuming we can make new academic work accessible, time will eventually solve the problem of today's grey literature. As copyright's line retreats year by year, the public domain advances, gradually whittling down the number of grey works. The task is to accelerate an inevitable process. Whether we can also correct the absurdity of extensive copyright durations—protecting value that no longer exists and rights claimed by no one—is another matter.

We have, then, three different kinds of works: those in the public domain, over which there is no dispute; those in copyright, where the legal framework is clear; and works in copyright yet out of print (grey literature), some of which are orphaned, their rights-holders no longer identifiable. Although they are without economic value, grey works are prevented from joining the public domain until decades after their authors' deaths. They present the biggest challenge.

### **Romantic Copyright**

Our second question, after which works, is, which authors? No one wants to deprive creators who live from their works of rightful recompense. Undeniably, piracy of books, music, film, and other content is theft. Open access does not seek to dispossess authors of their property nor to stint them of their rightful earnings. But authors are not all alike. Those whose creativity supplies their livelihood are entitled to the fruits of their labor. But most authors either do not make a living from their work or are already supported in other ways. In the latter case, having been paid once, their output arguably does not, in a narrow sense, belong to them, even though they may retain aesthetic and other claims.

Copyright was invented in the eighteenth century to give cultural producers property rights in their works, stimulating their creativity by rewarding them and permitting the most successful to earn a living from their efforts. But copyright also invented and legitimized the public domain, the trove of no-longer-protected work that belongs to all humanity. Had intellectual property been property in the conventional sense, creators and their heirs would have owned it forever. That natural law concept of eternal property rights was abbreviated for matters of the mind. Copyright thus

benefits society by ensuring a steady stream of content into the public domain as (short) copyright terms expire.

Copyright specifically aimed to help those who worked independently, not for wages or salary. It reflected in law the Romantic ideal of the author. Romantic creators were thought to produce individually and independently, as single authors inspired by their muse, indebted to no one else, and solely responsible for the ensuing masterpiece. They lived primarily from selling their works directly to the public, much like shopkeepers or artisans their wares. If unsuccessful, they starved in their garrets. They were independent twice over—economically, working for themselves, and aesthetically, indebted only to their personal inspiration.

This Romantic ideal of the creator became dominant in the eighteenth century. It broke with earlier concepts of authors' social role in two respects. Aesthetically, creators now stood alone. Previously, they had often been part of larger groups working collaboratively. Some artforms lend themselves more easily to individual work, others are collective endeavors. Sonnets, sonatas, novels, and still lifes are perhaps best created by a single person. In contrast, sculpture, frescoes, architecture, theater, opera, and symphonic concerts, not to mention film, usually involve teams, although they are often supervised by one dominant influence. That painters like Rubens ran large workshops, churning out works attributed to the master, was not due to their product's scale or size, but to the insatiable market they sought to supply at their peak. In the Romantic era, even collaborative efforts were seen as ultimately the inspiration of a single creator.

Second, in the Romantic view, the work expressed its creator's individuality. Earlier, singular creativity had garnered less of a premium. Artists were seen as channeling eternal values, not creating their own vision. With artists indebted to forerunners, imitation was valued higher than novelty.<sup>18</sup> The great works were in the past; the goal was to reachieve something similar. The Greeks and



Romans considered authors discoverers more than creators, uncovering the timeless reality of nature's forms.<sup>19</sup> Augustine argued that philosophers' statements were like silver and gold, not created by them but dug from the mines. Truth and wisdom belonged to all and could not be private property.<sup>20</sup> Classical antiquity inspired Renaissance artists to imitate nature and to emulate past masters.<sup>21</sup> They were more mimetic than creative.

Romanticism flipped such aesthetic ideals on their ear. Rather than borrowing from the past, authors should seek to connect directly to the divine.<sup>22</sup> As with Protestant sects, an unmediated tapping into the godhead released the now-enlightened from convention and the commonplace. In the nineteenth century, bohemianism extended this Romantic pose into a kind of over-ripe decadence. Self-professed outcasts, presenting themselves as marginalized and impoverished, indeed with a dashing streak of self-destructiveness, bohemian artists nonetheless laid claim to be venerated cultural exemplars.<sup>23</sup> Like early medieval hermits and monastics, they both despised and implicitly expected social approbation.

Such liberation from inherited strictures aimed to free artists to express their inner being. Borrowing from others, admitting to their influence, copying past models—all undermined the purest claims to originality. Plagiarism became a cardinal sin. Since works emanated from the individual, authors owned them, both spiritually and economically. The work was an integral part of the author. The primal form of property, Balzac insisted in 1834, was the work, "that which man creates between heaven and earth, that which has no other roots than in his intelligence."<sup>24</sup>

Economically, creators moved from being patronage recipients to becoming entrepreneurs during this period. Music allowed various income streams—composing, performing, conducting, and teaching. Unlike writers (other than playwrights), composers created but also disseminated and performed their works. Having

been employed by royal or aristocratic courts, they branched out to engage across the spectrum of their creations' life cycle. Patronage had once paid the rent; now, it was profit.

Haydn was a street musician before working for various aristocratic households, eventually as a court composer for the Esterhazys. Handel enjoyed the support of several noble English lineages even as he launched successive opera companies. Despite some success in producing concerts as a pianist playing his music, Mozart was happy for a part-time appointment cranking out dance music for the Austrian emperor.

Eventually, artists became entrepreneurs in their own right. In 1779, the Esterhazys permitted Haydn to write for their amusement, works that belonged to them, but also to hawk other compositions directly to publishers. When he cut ties to the Esterhazys and moved to London, Haydn was successful on his own. Beethoven enjoyed patronage from the Viennese aristocracy, but much of his income came from commissions, payment for work. Mahler's day job was as a conductor. For writers and painters, who could not promise wealthy families similar entertainment and whose output was physical objects, the practice of selling their wares had begun earlier and was more pronounced.

Abandoning support from wealthy patrons, creators turned instead to the public for sustenance. Insofar as authors had to please their benefactors, patronage had inhibited artistic freedom. By contrast, they were at liberty to do what they wanted in the marketplace—as long as it sold. Whether the tyranny of the patron or the tastes of the public limited artistic freedom more is a long-standing debate.

The distinction between scientific and artistic creativity was also significant. Scientists sought to understand something objectively out there. Thus, they were more discoverers than creators, or at least that was the view in the era when scientists were natural philosophers and were considered nature's bookkeepers.<sup>25</sup> But Romanticism

also brought to science an emphasis on the individual researcher's creativity, the spark of genius that fired investigations.<sup>26</sup>

Copyright was developed in the eighteenth century to protect publishers' property in works they had bought from authors. It aimed to encourage and reward Romantic creators—whose work, as an emanation of their personality, belonged wholly to them and could be alienated as they pleased. During the twentieth century, however, such Romantic certainties eroded. Bohemian artistes pouring out their souls in garrets now seemed overwrought and outmoded. Postmodernism undercut the assumption that artistic inspiration was individual and asocial—bereft of context, history, and background. It focused on creation's collective and historical aspects, how authors were inspired by, borrowed from, and copied their colleagues, peers, and predecessors.

Works were no longer seen as monads in splendid self-isolation but as strands in a cultural fabric, woven together with common and inherited assumptions, sentiments, references, archetypes, and tropes. Even the most celebrated writers were now recognized as borrowing shamelessly from their peers: Shakespeare from Montaigne, Racine from Euripides, Coleridge from Schelling, Picasso from Manet, Joyce from Homer, Pound from Dante, T. S. Eliot from almost everyone. Nor was the meaning of their works thought to be decided by authors alone. The authors' intent may have been part of the story, but how the public received and interpreted works also determined their ultimate meaning.

## The Rise of Collaboration

Authors no longer work as alone as Romanticism's tropes suggested. Collaboration has become more integral to artistic, scholarly, and scientific efforts. As knowledge grows and disciplines mature, individuals can hardly ever master their fields by themselves. The

increase in knowledge made specialization less the dehumanizing outcome of modernity or capitalism, and more a necessary process for mastering some part of a discipline. But a fond nostalgia for the Renaissance's semi-divinities, such as Leonardo, who excelled at many endeavors, died hard. Even Marx succumbed to the illusion, with his idea of well-rounded communists of the future, generalists who hunted in the morning, spent the afternoons fishing, reared cattle in the evening, and were critics after dinner.<sup>27</sup> They bore more than a passing resemblance to the country squires and club drones of Marx's own time.

The result of knowledge's increase and the demise of the Renaissance's hyper-accomplished person is the need for collaboration. The solitary genius has retired, replaced by the lab team.<sup>28</sup> Even in the social sciences, articles are written by sizable groups. Assemblies of researchers now do the work, often spread across the globe. As measured by citation intensities, the results of such collaborations are superior to individuals' outputs.<sup>29</sup> Few significant accomplishments remain the outcome of one person's efforts. Planes, buildings, medicines, computer programs, games, and films are all the result of collaborations. Outside literature, the humanities, and some art forms, we would be hard-pressed to name a significant fruit of solitary endeavor.

Attribution has democratized in tandem. Collaboration occurred earlier, too, but it was often treated more like an apprenticeship relation than collegially. The seventeenth-century chemist Robert Boyle published his results without much mentioning his coworkers, except occasionally to blame them for mishaps.<sup>30</sup> Nineteenth-century German professors commanded small armies of *Assistenten*, their postdoctoral students. Appropriating their work shamelessly, the professors could be impressively productive on the backs of others. Even now, James Patterson, a best-selling author of some 150 books, publishes several volumes annually. His hired team of writers drafts chapters for his edit, approval, and appropriation.<sup>31</sup>

Today, such hierarchal relationships have given way to a percolation onto the title page of almost everyone involved. In the 1890s, 98% of articles published in what was to become the *New England Journal of Medicine* had single authors; a century later, fewer than 5%.<sup>32</sup> In the sciences, the ranks of coauthors swelled. Doubling between 1960 and 1980, they increased almost 50% again in the two decades after 1988.<sup>33</sup> At times, so many claim coauthorship that the point of listing them all is unclear. Two physics articles from the 1990s, presenting findings from work on particle accelerators, had 406 and 271 coauthors, respectively.<sup>34</sup> That was nothing in comparison to the 2012 publication announcing observation of the Higgs particle at the Large Hadron Collider. The work was written by almost 3,000 coauthors, of whom 22 had already died by the time it appeared.<sup>35</sup> Such hyper-authorship was bested in turn in 2015 by an article with well over 5,000 coauthors.<sup>36</sup>

The film industry has solved a similar problem of mass authorship—if solution it can be called—by an inscrutable hierarchy in its endless parade of attribution. Conventionally, the opening credits list many—sometimes dozens—of producers of various stripes. Counterintuitively, executive producers rank two notches below producers, much like an “ordinary” professor in Germany outstrips any kind of extraordinary appointment, and Super Mammoth olives are larger than merely Super Colossal, while they, in turn, dwarf the Extra Jumbo.<sup>37</sup>

The film *The Butler* required no less than five producers, seventeen executive producers, six co-executive producers, four coproducers, and seven associate producers. Ninety minutes later, when the action fades, comes a veritable phonebook of worker bees, from the dolly grip to the gaffer, not forgetting the clapper loader and the focus puller.<sup>38</sup> As many as 3,000 people can work on a film, with an average Hollywood crew of 500, including at times as many as 250 stunt actors and 140 costume people.<sup>39</sup>

Scholars, too, have their hierarchies. Coauthors who are equal participants are generally listed alphabetically, as in high-energy particle physics. Other sciences follow other conventions. The first author (of whom there can be several, although obviously not all can be first on the list) is the one who conceived the project, was its main mover, and did most of the empirical work. The last author is usually also the corresponding author and is similar to the producer of a film. Often, they head the host lab. Usually, they design the research strategy, worry about responding to peer review demands, and are blamed if problems arise. In between come the other participants. Also in the middle are gift authorships, which are often granted to distinguished figures in the field who may have had little to do with the project but are honored with ceremonial participation.<sup>40</sup>

To tame the circus that some disciplines have become, classificatory schemes detailing participants' roles have been worked out—something more akin to Hollywood's hierarchy. CrediT, the Contributor Roles Taxonomy, launched in 2014, distinguishes fourteen roles.<sup>41</sup> These run the gamut from the necessary (funding acquisition, project administration) through the sufficient (data curation, methodology, resources, software, supervision, validation), to the sublime (conceptualization, validation, writing—original draft).

Works are increasingly the outcome of collective efforts. Poems and novels may still be solitary undertakings, but almost everything else tends toward the collaborative. The Nobel prizes, hailing from a less collective era, are limited to three recipients, even though dozens may have been equal participants. Hollywood allows only three producers credit for a Best Picture Oscar. Conversely, the number of prizes celebrating cultural output has mushroomed along with the works they reward, leaving us with an embarrassment of riches. With awards for everyone, being singled out loses its value.<sup>42</sup>

## Neo-Patronage

Since copyright was first institutionalized, two changes have fundamentally altered its legal landscape. First, most authors or content producers—their current more sober designation—are no longer independent workers. Few authors make a living exclusively from their works. How many is hard to gauge. Looking only at those who write, a 1976 study calculated that 300 US writers could live off their literary earnings (of ten million aspiring colleagues). Three years later, a survey of over 2,000 writers revealed that almost half held paid positions besides freelance writing.<sup>43</sup> More recently, the Authors Guild has discovered that half of all full-time authors earn less than the federal poverty limit (\$12,488) and 64% of authors' income comes from sources other than writing. Only 57% of authors derive all their income from writing, and only 40% could be said to earn a livable income.<sup>44</sup> These figures are partial at best, but clearly, freelance writing is not a profession in the conventional sense.

To make ends meet, writers have long relied on other employment. Henry Wadsworth Longfellow and James Russell Lowell were professors, Nathaniel Hawthorne was the US consul in Liverpool. Washington Irving was a merchant, Ralph Waldo Emerson lectured and was a minister, Edgar Allan Poe was an editor, and Henry David Thoreau, a jack-of-all-trades. T. S. Eliot was a banker and editor; William Carlos Williams, a physician; and William Faulkner wrote *As I Lay Dying* while working in a power plant. Dashiell Hammett was employed by Pinkerton's and the railroads, and Nathanael West was a hotel night manager. An insurance executive, Wallace Stevens turned down a faculty position at Harvard to remain vice president of his Hartford firm. The composer Charles Ives, also an insurance executive, helped develop modern estate planning.

Today, many authors are employees of universities, think tanks, museums, magazines, other cultural institutions, or corporations.

Novelists and poets often have day jobs as creative writing teachers. Such authors are paid by salary, not necessarily precisely for their creative work, but usually for something sufficiently close and undemanding not to distract them from their primary mission. Their salaried duties not only are congruent, but also usually require only some time and energy, allowing leeway for creative work. And, of course, all authors who are full-time faculty are paid for their output. At research universities, faculty receive perhaps half their salary for classes, the rest for scientific work. Lab scientists are even better off, fusing teaching with research by enlisting students in their experiments. At liberal arts colleges, community colleges, and other teaching-intensive institutions, the deal is less favorable. But staff there still enjoy the three reasons that, as the old joke has it, motivate even schoolteachers to take up their unfavored profession: June, July, and August.

In the early nineteenth century, when copyright was still young, this was less true. Today, we lament the fate of the academic precariat, the adjunct faculty who are paid a pittance for each course, enjoying few benefits and less security. Things were once worse. Tenured professors, whom we now regard as among those most comfortably ensconced in salaried employment, used to be an even smaller minority. When the German universities expanded in the nineteenth century, most teaching fell to irregularly employed *Privatdozenten*, paid—if they could collect the money—by fees from students attending their courses. As late as the 1950s, professors made up only a quarter of the teaching staff.<sup>45</sup> Schopenhauer needed the wealth inherited from his father when—as a provocation—he scheduled his courses at the University of Berlin in 1820 at the same hour as his despised but popular colleague, Hegel, thereby dampening attendance and fees.<sup>46</sup>

Today, much content is produced by salaried authors. Our age is one of renewed patronage, but now from institutions, not the aristocracy. Compared to when Hegel died in the 1830s, Germany



today has per capita a dozen times as many professors.<sup>47</sup> Similar trends hold elsewhere. Even during the early twenty-first century, when universities were commonly seen as in crisis, faculty numbers at US institutions continued a gradual climb.<sup>48</sup> Many authors are now salaried employees for whom—other than its promise of aesthetic control—copyright should be a matter of indifference.

The state has become the new Maecena. During the Cold War, officially favored authors enjoyed government support in the East Bloc nations. Sweden has a system of paying (modest) salaries directly to writers and artists.<sup>49</sup> The *New Yorker's* staff writers benefit from a private variant of this. In Western Europe, ministries of culture support art forms, especially those with elaborate infrastructure, such as opera and film. From the BBC to the FilmFernsehFonds Bayern, they are the modern-day Medicis.

In the US, universities assume a similar function. Without them, classical music would scarcely exist, and many novelists and poets earn their keep teaching creative writing. Even the military has paid to underwrite academic skills and talent deemed geopolitically necessary, such as Russian fluency during the Cold War. Think tanks in the US are numerous and largely privately financed, while their European equivalents are funded by unions, business associations, or political parties.<sup>50</sup> They, too, are part of this ecosystem.

By whatever means, the government is by far the single biggest funder of scholarship and academic research. Direct state sponsorship is most evident. Other times, the subsidy comes indirectly when donations to universities and cultural institutions are tax-deductible. Either way, 80% of global academic research is paid for by government, thus by all of us as taxpayers.<sup>51</sup>

For the sciences, government funds a multi-billion-dollar global research complex. That follows long traditions of directly underwriting scientific research. The Royal Society of Britain, founded in 1660, claims to be the oldest institution supporting science. The Academia Secretorum Naturae was established in Naples a century

earlier, the Accademia dei Lincei in Rome in 1603. Today, global expenditure on research and development is slightly above 2% of GDP.<sup>52</sup> Almost \$2 trillion are at stake annually. In 2013, worldwide research costs were \$1.48 trillion. Much was corporate R&D, but governments financed between 25% and 30%. Universities paid for a fifth or so (\$296 billion).<sup>53</sup>

The government's role in producing knowledge can hardly be overstated. Curiosity is ultimately the psychological driver of the search for understanding. Yet, without the infrastructure behind curiosity's regular and continuous exercise, only the occasional enthusiast would be active. Like artists, the earliest scholars enjoyed either independent means or wealthy patrons. With the rise of universities in the Middle Ages, the pursuit of knowledge began to institutionalize. The first universities were more like professional schools than institutions selflessly uncovering new understanding. They trained priests and theologians for service in churches. Later, military academies supplied the absolutist state with officers to calculate projectile trajectories, plan fortifications, and otherwise master early-modern technologies of warfare. Universities trained lawyers and other civil servants for ever more bureaucratized government administrations.

Private patrons' leverage over their in-house authors is evident. Early universities, too, were in thrall to rulers. Theological faculties had to toe the doctrinal line espoused by the monarch. Henry VIII and Edward VI purged English universities in a Protestant direction. Mary I took them back to Catholicism. Only male Anglicans could be students at Oxbridge until the 1850s.<sup>54</sup> When the state began intervening in higher education, it took over existing institutions, as in Scotland and continental Europe, or created them directly, as in Berlin in 1810 or with the American land-grant institutions. Dispossessing the Church, the French Revolution nationalized universities throughout Europe, leaving them reliant on student fees and state financing. Elsewhere, endowments continued to be part of the

mix; they were raised privately, as for the ancient English universities, or from the state, as in Sweden and the American land-grant establishments.<sup>55</sup>

The outcome was the modern university, pioneered in the early nineteenth century by the new University of Berlin, inspired by Alexander von Humboldt. Research and teaching were to inform each other, professors and students alike engaged in the mission of advancing knowledge while communicating their discoveries accessibly, and all financed by a combination of state monies and tuition payments. Self-administration was crucial. Where private institutions remained powerful, as in the UK and US, that was self-evident. But even state-financed universities in Europe asserted their claims to independence. Selecting mainly on scholarly merit, they decided whom to admit, hire, and promote, how to teach, and what to research.<sup>56</sup>

## The Salaried Creator

What followed from this shift in the aesthetics and economics of creativity? With copyright tailored to the Romantic artists' predicament, who decided once they no longer set the tone? Nowadays, salaried authors working collaboratively are commonplace. Copyright has not entirely ignored such creators, but they have been something of an afterthought. Work for hire was how copyright dealt with employees who created at others' behest. It evolved in the mid-nineteenth century, but not equally in all nations.

Work for hire grants employers—not the immediate creators—most rights in works produced by their employees. It dates from the late eighteenth century, giving those who commissioned art the rights in the creation they paid for. Portraits were an early genre covered, with rights vested in either the subject or the work's commissioner. The artist was assumed to be doing their bidding.

(Ghostwriters will understand the logic.) For collective efforts, such as encyclopedias or periodicals, authorship was vested in the publisher.

Work for hire took off in the twentieth century, especially in the US, at the film industry's behest.<sup>57</sup> It is not hard to see why. Film is inherently collaborative, requiring cooperation among scores of creators, all with claims to be essential participants. To tame the many voices clamoring for recognition—from director to costume maker—someone had to be in charge. That holds equally for the software industry and gaming. The Romantic idiom of the single author failed to do justice to multiple creatorship. “Contributor” was one suggestion to designate collective authors.<sup>58</sup> More generally, this posed the question, what is the collaborative entity that creates or knows when authorship becomes collective? When the wisdom of crowds is invoked, who is being wise?<sup>59</sup> That, in turn, was a subset of the thorny idea of collective knowledge, the claim that groups, not just individuals, can be cognizant entities.<sup>60</sup>

The question we address in the conclusion is whether work for hire should provide the template for a broader approach to copyright in an era when most content is produced by creators who do not earn their living from selling their works.

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# Athena Unbound

## Why and How Scholarly Knowledge Should Be Free for All

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